NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CLOSURE OF WASTE IMPOUNDMENTS

(no.)
CODE 360

DEFINITION

The closure of waste impoundments (treatment lagoons and waste storage ponds), that are no longer used for their intended purpose, in an environmentally safe manner.

PURPOSE

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

To protect the quality of surface water and groundwater resources;

To eliminate a safety hazard for humans and livestock;

To safeguard the public health.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to Natural Resources Conservation Service (NRCS) standards, this practice will only apply where the investigation, as called for in National Engineering Manual (NEM), 501.23, shows structural integrity.

CRITERIA

Laws and Regulations. This practice must conform to all federal, state, and local laws and regulations. Laws and regulations of particular concern include those involving drainage, water rights, land use, land disturbed by construction, pollution control, property easements, wetlands, preservation of cultural resources, and endangered species.

Waste Cleanup. All structures used to convey waste to waste impoundments shall be removed and replaced with compacted earth material or otherwise rendered unable to convey waste.

Liquid and slurry wastes shall be agitated and pumped to the extent conventional pumping will allow. Clean water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with NRCS conservation practice standard, Waste Utilization (633). The sludge remaining on the bottom and sides of the waste treatment lagoons or waste storage ponds may remain in place if it will not pose a threat to the environment. If leaving the sludge in place would pose a threat, it shall be removed to the fullest extent practical and utilized in accordance with NRCS conservation practice standard, Waste Utilization, Code 633.

Land Reclamation. Waste impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three feet or more above natural ground. Impoundments with embankments may be breached so that they will no longer impound water and excavated impoundments may be backfilled to reclaim the site for other uses.

Embankment Impoundments. Waste shall be removed from the site before the embankment is breached. The slopes and bottom of the breach shall be stable for the soil material involved, however the side slopes shall be no steeper than three horizontal to one vertical (3:1).

Excavated Impoundments. The backfill height shall exceed the design finished grade by five percent to allow for settlement. The finished

surface shall be constructed of the most clayey material available and mounded to shed rainfall runoff. Incorporate available topsoil where feasible to aid establishment of vegetation.

Conversion to Fresh Water Storage. The converted impoundment shall meet the requirements of the applicable NRCS practice standard for the intended purpose.

Safety. When sludge is not removed from a waste impoundment that is converted to fresh water storage, it shall not be used for fish production. Precautions (fencing and warning signs) shall be used to ensure that the pond is not used for incompatible purposes such as swimming and livestock watering until water quality is adequate for these purposes.

Protection. All disturbed areas not returned to crop production shall be vegetated in accordance with seeding specifications in the South Dakota Technical Guide, or other suitable measures used to control erosion and restore the esthetic value of the site.

Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

CONSIDERATIONS

Alternative methods of sludge removal may be required where the impoundments contain large amounts of vegetation, soil, or other debris.

Minimize the impact of odors associated with emptying and land applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

Keep sludge left in place flooded to prevent its aerobic decomposition with the potential release of nutrients to surface and ground water.

PLANS AND SPECIFICATIONS

Plans and specifications for closure of abandoned waste treatment lagoons and waste storage ponds shall meet this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The closure plan must follow the procedures specified by appropriate state regulatory agencies. The plan should include such items as:

Time schedule for activities (including notification to state agencies when the closure plan will be implemented and completed);

Methods to dewater, handle, and dispose of waste materials;

Analysis of sludge/sediment/soil liner.

OPERATION AND MAINTENANCE

The proper closure of a waste treatment lagoon or waste storage pond should require little or no operation and maintenance; however, if it is converted to another use, such as a fresh water pond, operation and maintenance shall be in accordance with the needs as set forth in NRCS conservation practice standard for the intended purpose.